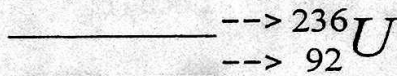


Nuclear Chemistry WS 1

Complete the following table for the following subatomic particles:

Atomic particle	Symbol	Location	Charge	Mass
Protons				
Neutrons				
Electrons				

Looking at your periodic table, label the mass # and atomic # in the full atomic symbol.



Using the full atomic symbol from above, complete the following with the appropriate symbol indicating the subatomic particle known from each number:

top = ____ + ____ # bottom = ____

Complete the following table for **neutral atoms**. Read down a column!

Full atomic symbol (isotope notation)	${}^{236}_{92}\text{U}$	${}^{234}_{92}\text{U}$	${}^{209}_{84}\text{Po}$	${}^4_2\text{He}$	${}^{131}_{54}\text{Xe}$
Name (isotope form)	Uranium - 236				
Atomic number					
Mass					
# of electrons					
# of protons					
# of neutrons					

5. Give three isotopes of Hydrogen in the full atomic symbol form (mass = 1,2,3)

6. Using your periodic table, fill in the most likely number of neutrons for each atom present below.

protons	neutrons	protons	neutrons	protons	neutrons	protons	neutrons	protons	neutrons
1		11		24		64		104	
2		12		28		68		108	
3		13		32		72		112	
4		14		36		76			
5		15		40		80			
6		16		44		84			
7		17		48		88			
8		18		52		92			
9		19		56		96			
10		20		60		100			

7. Flip your composition notebook sideways. Graph protons (x) versus neutrons (y) for the elements in the chart above. Give an appropriate title and axes labels. Do not include a best-fit line. (make sure scale on both axis is equal)

8. What is a nuclide?

9. What makes one nuclide stable and another of the same element unstable? Explain.

10. If an atom is not stable, it is said to be _____.

Name _____

Period _____

NUCLEAR EQUATIONS WORKSHEET

1. Write a nuclear equation for the alpha decay of $^{231}_{91}\text{Pa}$.

2. Write a nuclear equation for the beta decay of $^{223}_{87}\text{Fr}$.

3. Write a nuclear equation for the alpha decay of $^{149}_{62}\text{Sm}$.

4. Write a nuclear equation for the beta decay of $^{165}_{61}\text{Pm}$.

5. Write a nuclear equation for the alpha decay of $^{249}_{101}\text{Md}$.

6. Write a nuclear equation for the alpha decay of $^{146}_{62}\text{Sm}$.

7. Write a nuclear equation for the beta decay of $^{198}_{85}\text{At}$.

8. Write a nuclear equation for the alpha decay of $^{150}_{64}\text{Gd}$.

9. Write a nuclear equation for the beta decay of $^{152}_{54}\text{Xe}$.

10. Write a nuclear equation for the beta decay of $^{120}_{55}\text{Cs}$.